

*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

**1. General Description of Data to be Managed****1.1. Name of the Data, data collection Project, or data-producing Program:**

March 2006 Lidar Point Data of Southern California Coastline: Long Beach to US/  
Mexican Border

**1.2. Summary description of the data:**

This data set contains lidar point data (Geodetic Coordinates) from a strip of Southern California

coastline (including water, beach, cliffs, and top of cliffs) from Long Beach to the US/  
Mexico border. The data set was created

by combining data collected using an Optech Inc. Airborne Laser Terrain Mapper (ALTM) 1225 in combination with geodetic quality

Global Positioning System (GPS) airborne and ground-based receivers. The Bureau of Economic Geology, the University of Texas at

Austin owns and operates an ALTM 1225 system (serial number 99d118). The system was installed in a twin engine Partenavia P-68

(tail number N3832K) owned and operated by Aspen Helicopter, Inc. The lidar data set described by this document was collected on

24 and 25 March 2006; Julian Days 08306 and 08406 (see Lineage, Source\_Information, Source\_Contribution for pass information).

99d118 instrument settings for these flights were; laser pulse rate: 25kHz, scanner rate: 26Hz, scan angle: +/- 20deg, beam

divergence: narrow, altitude: 300-600m AGL, and ground speed: 95-120kts. Two GPS base stations were operating during each day

of the survey, Point Loma and San Onofre on 08306 and Seal Beach and San Onofre on 08406 (see Lineage, Source\_Information,

and Source Contribution for coordinates). Data represented is all points including terrain, vegetation, and structures.

This data also contains returns from the water surface. No processing has been done to remove returns from terrain,

vegetation, structures or water surfaces.

Original contact information:

Contact Name: Julie Thomas/Randy Bucciarelli

Contact Org: SCBPS/CDIP, Scripps Institution of Oceanography

Title: Project Managers

Phone: 858-534-3032

**1.3. Is this a one-time data collection, or an ongoing series of measurements?**

One-time data collection

**1.4. Actual or planned temporal coverage of the data:**

2006-03-24 to 2006-03-25

**1.5. Actual or planned geographic coverage of the data:**

W: -118.203606, E: -117.116806, N: 33.768792, S: 32.510392

**1.6. Type(s) of data:**

*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*

**1.7. Data collection method(s):**

*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:**

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**

NOAA Office for Coastal Management (NOAA/OCM)

**2.2. Title:**

Metadata Contact

**2.3. Affiliation or facility:**

NOAA Office for Coastal Management (NOAA/OCM)

**2.4. E-mail address:**

coastal.info@noaa.gov

**2.5. Phone number:**

(843) 740-1202

**3. Responsible Party for Data Management**

*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:****3.2. Title:**

Data Steward

**4. Resources**

*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?****4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):****5. Data Lineage and Quality**

*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible**

*(describe or provide URL of description):*

Process Steps:

- 2006-03-24 00:00:00 - GPS and XYZ-Point Data Processing Transfer raw ALTM 1225 flight data (laser ranges with associated scan angle information and IMU data), airborne GPS data collected at 1 Hz using Ashtech receiver, and ground-based GPS data collected at 1 Hz using Ashtech Z-12 receivers to processing computer. Generate decimated lidar point file from above three data sets using Optech's Realm 2.27 software. This is a 9-column ASCII data set with the following format: time tag; first pulse Easting, Northing, HAE; last pulse Easting, Northing, HAE; first pulse intensity; and last pulse intensity. View decimated lidar point file to check data coverage (i.e. sufficient overlap of flight lines and point spacing). Compute base station coordinates using National Geodetic Survey's PAGES-NT software. Compute aircraft trajectories from each base station GPS dataset using National Geodetic Survey's KINPOS software. Solutions for base stations coordinates and aircraft trajectories are in the International Terrestrial Reference Frame of 2000 (ITRF2000). A final aircraft trajectory was computed from a weighted average of the trajectories

from the two base stations. Epoch-by-epoch weighting for the individual trajectories was inversely proportional to the baseline length (distance from base station) and solution RMS. Transformed trajectory solution from ITRF2000 to North American Datum of 1983 (NAD83) using the National Geodetic Survey's Horizontal Time Dependent Positioning software (<http://www.ngs.noaa.gov/TOOLS/Htdp/Htdp.html>). Input NAD83 trajectories and aircraft inertial measurement unit data into Applanix's POSProc version 2.1.4 to compute an optimal 50Hz inertial navigation solution (INS) and smoothed best estimate of trajectory (SBET). Substitute the INS and SBET into Realm 2.27. Generate a set of initial lidar instrument calibration parameters (pitch, roll, scale, and elevation bias) for each lidar flight, then incrementally improve parameters by iteratively comparing a subset of the lidar output to the GPS kinematic ground control. Once the instrument calibration parameters are sufficiently accurate, create the complete lidar point file (9-column ASCII file) for the entire survey area in UTM Zone 11 with elevations being heights above the GRS-80 reference ellipsoid (HAE). The output format from REALM 2.27 was a 9-column ASCII file containing: the second in the GPS week, easting, northing and HAE of the first lidar return, the easting, northing and HAE of the last lidar return, and the laser backscatter intensity of the first and last returns. Using the GEOID99 geoid model, heights above the GRS80 ellipsoid were converted to orthometric heights with respect to the North American Vertical Datum of 1988 (NAVD88). Parse the 9-column lidar point file into 3.75-minute quarter-quadrangle components. Convert UTM Easting and Northing to geodetic latitude and longitude with respect to the GRS80 ellipsoid. The conversion was computed using the TMGEOD and TCONPC fortran subroutines written by T. Vincenty (NGS). Each record contains 9 columns of data: time tag (seconds in the GPS week), first return Latitude, first return Longitude, first return NAVD88, last return Latitude, last return Longitude, last return NAVD88, first return intensity, and last return intensity. In some cases either the first or last return values may be missing (5 columns). Latitude and longitude are in decimal degrees with nine significant digits to retain the 0.01m resolution of the UTM coordinates. West longitude is negative and north latitude is positive. The UTM quarter-quad files were re-organized into latitude delineated files. UTM quarter-quads files that were delineated by the same upper and lower latitude bounds were concatenated. The lat-long files were named by the month-year of the survey (e.g. mar06) and the lower latitude bounding the quarter-quad. Processing occurred 20060324-20060726.

- 2003-04-18 00:00:00 - Created initial metadata

- 2007-07-24 00:00:00 - The NOAA Office for Coastal Management (OCM) received files in ASCII format. The files contained LiDAR intensity and elevation measurements. OCM performed the following processing on the data to make it available within the LiDAR Data Retrieval Tool (LDART) 1. Data returned to ellipsoid heights from NAVD88, using GEOID99. 2. Data converted to LAS format. 3. The LAS data were sorted by latitude and the headers were updated.

#### **5.1.1. If data at different stages of the workflow, or products derived from these**

**data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

**6. Data Documentation**

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

No

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

Missing/invalid information:

- 1.6. Type(s) of data
- 1.7. Data collection method(s)
- 3.1. Responsible Party for Data Management
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
  - 7.1.1. If data are not available or has limitations, has a Waiver been filed?
  - 7.1.2. If there are limitations to data access, describe how data are protected
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

**6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:**

**6.3. URL of metadata folder or data catalog, if known:**

<https://www.fisheries.noaa.gov/inport/item/50010>

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: [https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC\\_PD-Data\\_Documentation\\_v1.pdf](https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf)

## 7. Data Access

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

### 7.1. Do these data comply with the Data Access directive?

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

### 7.2. Name of organization of facility providing data access:

NOAA Office for Coastal Management (NOAA/OCM)

#### 7.2.1. If data hosting service is needed, please indicate:

#### 7.2.2. URL of data access service, if known:

<https://coast.noaa.gov/dataviewer/#/lidar/search/where:ID=54>

[https://coast.noaa.gov/htdata/lidar1\\_z/geoid12a/data/54](https://coast.noaa.gov/htdata/lidar1_z/geoid12a/data/54)

### 7.3. Data access methods or services offered:

This data can be obtained on-line at the following URL: <https://coast.noaa.gov/dataviewer>

;

### 7.4. Approximate delay between data collection and dissemination:

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

## 8. Data Preservation and Protection

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

### 8.1. Actual or planned long-term data archive location:

*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

**8.1.1. If World Data Center or Other, specify:**

**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

**8.2. Data storage facility prior to being sent to an archive facility (if any):**

Office for Coastal Management - Charleston, SC

**8.3. Approximate delay between data collection and submission to an archive facility:**

**8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**

*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

## **9. Additional Line Office or Staff Office Questions**

*Line and Staff Offices may extend this template by inserting additional questions in this section.*